

GTCATATGCTGTTCAAGTCATGGCAACTGGCAGCAGGCCTGGGCTCTGCTGGAGCTGGCATGGACACGGCAGCCAC	90
M L F K S W Q L A A A S G L L S G V L G I P M D T G S H	28
CCCCATTGAGGCTGTTGATCCCGAAGTGAAGACTGAGGTCTTGCTGACTCCCTTGCTGAGCAGGGATGACGACTGGGAGTCACCT	180
P I E A V D P E V K T E V F A D S L L A A A G D D D D W E S P	58
CCATACAACTTGCTTACAGGAATGCCCTGCCAATTCAACCTGTCAGCAGCCAAGATGATCATTACCAACCCCTGTCACCGCAAGGAC	270
P Y N L L Y R N A L P I P P V K Q P K M I I T N P V T G K D	88
ATTTGGTACTATGAGATCGAGATCAAGCCATTTCAGCAAAGGATTACCCACCTGGGACCTGGCACTCTAGTAGGCTACGGATGGCATG	360
I W Y Y E I E I K P F Q Q R I Y P T L R P A T L V G Y D G M	118
AGCCCTGGTOCTACTTCATGTTCCAGAGAACAGAGACTGTAGTTAGGTTCATCAACAATGCCACCGTGGAGAACCTGGTCCATCTG	450
S P G P T F N V P R G T E T V V R F I N N A T V E N S V H L	148
CAAGGCTCCCCATGGGTGGCCCTTGGATGGTGGCTGAAAGATGTGACCTTCCCTGGGAGTACAAGGATTACTACCTTCCAACTAC	540
H G S P S R A P F D G W A E D V T F P G E Y K D Y Y F P N Y	178
CAATCCGGGGGCGCTCTGGGTACCATGACCACGCTTCAATGAAGACTGCTGAGAATGCTACTTTGGTCAGGCTGGGCGCTACATTATC	630
Q S A R L L W Y H D H A F M K T A E N A Y F G Q A G A Y I I	208
AACGACGAGGCTGAGGAATGCTCTGGCTTCTGCTAGTGGCTATGGGAGTTGGATATCCCTCTGATCCTGACGGCCAAGTACTATAAGCC	720
N D E A E D A L G L P S G Y G E F D I P L I L T A K Y Y N A	238
GATGGTAACCTGGGTGACCGAGGGTGAGGACCCAGGACCTGGGGAGATGTCATCCATGTCACGGACAGCCATGCCCTTCTTAAC	810
D G T L R S T E G E D Q D L W G D V I H V N G Q P W P F L -N	268
GTCCAGCCCCGCAAGTACGGTTGGATTCCTCAACGCTGGCTGCTGGCTACCTCTACCTGTCAGGACAGCTCTCCAAAC	900
V Q P R K Y R F R F L N A A V S R A W L L Y L V R T S S P N	298
GTCAGAAATTCCCTTCAAGTCATTGCCCTGATGCTGGCTCTCAAGGCCCCGGTCAAGACCTCTAACCTCTACCTGCTGGTGGAG	990
V R I P F Q V I A S D A G L L Q A P V Q T S N L Y L A V A E	328
CGTTACGAGATCAATTGACTTCACCAACTTGGCTGGCCAGACTCTGACCTGGCAACGGTGGCTGAGACCAACGATGTCGGCGAOGAG	1080
R Y E I I I D F T N F A G Q T L D L R N V A E T N D V G D E	358
GATGAGTACGCTCCACTCTGGGTGATGGCTTGGCTGGCTGAGGACAACAGGCAAGGTCCCCCTCCACTCTGGT	1170
D E Y A R T L E V M R F V V S S G T V E D N S Q V P S T L R	388
GAOGTTCCCTTCCCTCTCACAGGAAGCCCCGGACAACCACTCAAGTTGAACGCCACCAACGGACACTACCTGATCAACGATGTT	1260
D V P F P P H K E G P A D K H F K F E R S N G H Y L I N D V	418
GCTTGGCGATGTCATGAGCGTGTCTGGCAAGGGCGACCTGGCACCGTGGCTGGACCTGGAGACTCCCTGGAGGTGG	1350
G F A D V N E R V L A K P E L G T V E V W E L E N S S G G W	448
AGCCACCCCGTACACATTCACTTGGTACTTCAGAGATCTCAAGGAACCTGGTGGCTGGCCAGGTACGCCCTACGAGCTGGCTGG	1440
S H P V H I H L V D F K I L K R T G G R G Q V M P Y E S A G	478
CTTAAGGATGTOGCTGCTGGCTGGCAAGGGCTGACCATGAGGGCTGGACCTGGAGCTGGAGCTTACATGGGACTGT	1530
L K D V V W L G R G E T L T I E A H Y Q P W T G A Y M W H C	508
CACAAACCTCATTCAAGGAGATAACGACATGATGGCTGTATTCAACGTCAACGGCATGGAGGAGAAGGGATATCTTCAGGAGGACTCGAG	1620
H N L I H E D N D M M A V F N V T A M E E K G Y L Q E D F E	538
GACCCCATGAACCCCAAGTGGCGGGCGTCTTACAAACGGCAACGACTCTGGCTGGAAACTCTGGCGGAGTCCTCACT	1710
D P M N P K W R A V P Y N R N D F H A R A G N F S A E S I T	568
GGCGGAGTGGCAGGAGCTGGCGAGCAGGAGCCGTACAAACGGCTCGATGAGATCTGGAGGATCTTGGAAATGGAGGAGTAA	1791
A R V Q E L A E Q E P Y N R L D E I L E D L G I E E	594

Figure 1

CTGGCTAGCC	TCACTTGGTA	GACAGCCCTG	ACAGCCTCAC	TGGCTGGGG	TGAAAGGCC	AGCAATATC	TGGTCACTG	80
CTAATAGTC	CTTGCTAOGC	GCAGAAAGCT	CCTTGGCGAA	GGGGCACAGA	CTATCAAGT	AGACATATAG	CATGCAATGTC	160
TTTCATAGCC	ACAGTTAGGG	TGGTGACCTA	CTOGAAGAGG	CCCCGACTTG	CATGCATAAG	ACATGTGGCT	TCCATGCAAC	240
ATGATGCGC	ACATGGCGA	TCAAGGCAACC	TCTGCACTGA	GAATAGAAC	CCCCGGTT	CCCTTGTGTT	CTTTCCTT	320
CTCAACGACG	CGTGAGCGTG	GTAACTTGA	GCAAGGGCGA	GTGGCTGTT	CAOGAGGTT	CCATCGAATC	CTCTTCCTTC	400
CCAATCATGA	CCTGGGGGGGG	GAGTTTAGCC	OCATCAACGG	CTGTGAAATC	CACTTCGATA	ATCCATAGCT	AGTGCTACTC	480
TTCATAGTT	GCTCTGTGATG	GGGCACATTG	GTCACATTG	CTTGGTTCT	OCTAATGTT	TCTCTTCGGC	ATCAAGGCTC	560
TATGCGGAC	GACAACACCT	CATTGGCGCG	GACCACCTTG	AGCGCGCAAG	CACCTTGGG	CGGAAGGAGT	TGATAACACC	640
CTTCACCCCT	GCCAATGAT	GGAGTTTGTG	TCTATTGTC	ATGATCACCT	CACATTCACT	AGATCACCGA	TCTTGGAAAGA	720
GGGTGTGAA	GGCAGACAG	CTTGTGCGTG	TCTTGTGAGA	CTCAGGTCAG	CTCTAGGG	CTATCACAGC	TCAGGATTAT	800
CAAGTCCCGT	AAAGTOCAGA	CCCTTTTCA	TGATGATGC	TCCCTAAATT	GGCTATCTC	TATGCCGTAG	CAGCGTCTT	880
GGCTACAAC	GGCTGCGATG	GCTGAAGCAT	CGTGAGATCT	ATAAAGGCT	CGAAATCCTC	GGTGAAGTC	GAATGCTC	960
TCCACACCG	TCAACAACAA	GCTTCTTCT	CITACAGCTT	ACCCGAGCA	CATTACAGA	ACTCTTCCT	TCTTTGTC	1040
AAATATGTGT	TCAAGTCATG	GCAACTGGCA	GCAGCCTCOG	GGCTCGTGC	TGGAGTCCTC	GGCATCCGA	TGGACACCGG	1120
CAGCCACCCC	ATTGAGGCTG	TTGATCCCGA	AGTGAAGACT	GAGGCTCTG	CTGACTCCCT	CCITGCTGCA	GCAGGGGATG	1200
ACGACTGGGA	GTCACTOCA	TACAACCTTG	TTTACAGGTG	AGACACCTGT	CCCACCTGTT	TICCCCTCGAT	AACTAACTCT	1280
TATAGGAATG	COCTGCGAAT	TCAACCTGTC	AAGCAGCCCA	AGATGTATGT	CTTGTGTTTT	CTACGAAGCA	ACTCGGGCCC	1360
GACTAATGTA	TTCTAGGATC	ATTACCAACC	CTGTCACCCG	CAAGGACATT	TGGTACTATG	AGATOGAGAT	CAAGCCATT	1440
CACCAAAGGG	TGAGTTTGT	CAGAAACCTT	GGGTAATTA	ATCATTTGTA	CIGACCCCTT	CAGATTAC	CCACCTTGGG	1520
CCCTGCGACT	CTCGTGGGCT	ACGATGGCAT	GAGCCCTGGT	CCTACTTCA	ATGTTCCCG	AGGAACACAG	ACTGTAGTIA	1600
GGTTCATCAA	CAATGCGACC	GTGGAGAACT	GGGTCATCT	GCACGGCTCC	CCATCGGTG	CCCCCTTGA	TGGTGGGCT	1680
GAAGATGTGA	CCCTCCCTGG	GGAGTACAAG	GATTACTACT	TTCCAACTA	CCAATCGCC	CGCTCTCTG	GGTACCATGA	1760
CCAOGCTTTC	ATGAAGGTAT	GCTAOGAGCC	TTTATCTTC	TGGCTACCT	TGGCTAAC	AACTTCCTT	CGTAGACTGC	1840
TGAGAATGCC	TACTTGGTC	AGGCTGGCG	CTACATTATC	AACGACGAGG	CTGAGGATGC	TCTCGGTCTT	CCTAGTGGCT	1920
ATGGGGAGTT	CGATATCCCT	CTGATCTGA	CGGCGAAGTA	CTATAACGCC	GATGGTACCC	TGCGTTCGAC	CGAGGGGTGAG	2000
GACCAGGAC	TGTGGGGAGA	TGTCACTOCAT	GTCAACCGAC	AGCCATGGCC	TTTCTTAAC	GTCCAGCCCC	GCAAGTAACG	2080
TTTCGCGATTC	CTCAACGCTG	CGGCTCTCG	TCTTCTGCTC	CTCTACCTCG	TCAGGACCG	CTCTCCAAAC	GTCAAGATT	2160
CTTTTCAAGT	CATTGCGCT	GAAGCTGGTC	TCTTCTCAAGC	CCCCGTTCA	ACCTCTAAC	TCTACCTTGC	TGTGCGCGAG	2240
CGTTACGAGA	TCAATTATGG	TAIAGCCCTCC	CCCTCTCAAGA	ATGAGTCAAG	AACTCTAAGA	CTAACACTTG	TAGACTTCAC	2320
CAACTTGT	GGCCAGAC	TTGACCTGCG	CAACGTTGCT	GAGACCAACG	ATGTOGGCGA	CGAGGATGAG	TAOGCTCGCA	2400
CTCTCGAGGT	GTAGCGCTTC	GTGTCAGCT	CTGGCACCTG	TGAGGACAAAC	AGOCAGGTCC	CTCTCCACT	CGGTGACGTT	2480
CTTTCCTTC	CTCACAAAGG	AGGCCCCGCC	GACAAGCACT	TCAAGTTGA	AGCGAGCAAC	GGACACTACC	TGATCAACGA	2560
TGTTGGCTT	GGCGATGTC	ATGAGGTGT	CTTGGCCAAG	COCGAGCTCG	GCACCGTITGA	GGTCTGGGAG	CTCGAGAACT	2640
CTCTTGTGAG	CTGGAGCCAC	COCGTCCACA	TTCACCTCTG	TGACTTCAAG	ATCTCTAAC	GAACCTGGTGG	TGTTGGOCAG	2720
GTCACTGCC	ACGAGCTGTC	TGGCTTAAG	GTGTCGCT	GGTTGGGCAG	GGGTGAGACC	CTGACCATCG	AGGCCCCACTA	2800
CCAACCTGG	ACTGGAGCTT	ACAATGCGCA	CTGTCACAA	CTCATTCACG	AGGATAACGA	CATGATGGCT	GTATTCAACG	2880
TCACCGCCAT	GGAGGAGAAG	GGATATCTTC	AGGAGGACTT	CGAGGACCCC	ATGAAACCCA	AGTGGGGGCG	CGTTCCTTAC	2960
AACCCCAAC	ACTTCCATGC	TGGCCCTGG	AACTCTCG	COGAGTACAT	CACTGCGCGA	GTGCGAGG	TGGCGAGCA	3040
GGAGCGTAC	AACCGCTCG	ATGAGATCT	GGAGGATCTT	GGAAATOGAGG	AGTAAACCCC	GAGOCACAAG	CTCTACAATC	3120
CTTTTCACT	TTAAGACGAG	CTCTTGGTG	CGTATTCTT	TCTTCCCTAC	GGGGAACTCC	GCTGTOACT	CGATGTTGAA	3200
GGACCATCAC	AAAGCAACGT	ATATAATGG	CTCACCACTG	TCATTAACGC	CCACTTGTAC	CTATTGATT	CTTGTCTCAA	3280
CTTTTCTAGT	GGAGAGGTG	CCATAGTC	GAACAGGCCA	TAGGGCTATC	GTCTAAACTG	AACTATGIG	TGGTCTGTGA	3360
GTGAGGATG	ATGTCATATG	TGATGAGACA	CAGTAAATAC	GGTATATCTT	TTCCTAGGAC	TACAGGATCA	GTITCTCATG	3440
AGATTACATC	CGTCATATGT	TGTCCTATGA	GAGTCTAGCT	AAGGTTGAGA	ATGCAATCAGA	CGGAATCATT	TGATGCTCTC	3520
AGCTGTTATT	ACCGATGTA	GACAAGTTAG	GTAAGTTGCT	TGGTATCGA	AAAATGACTCA	GGCTCCCTCA	TTAGGTTGCA	3600
TGIGAAAACC	TTCAGCAACT	CATGGGTTGTT	GGGACCAAAT	CATCCATACC	TGATTTTGT	AACTGACCTG	GGTCAAT	3677

Figure 2

1MFKHTLGAALSLIFNSNAVQA.SPVPETSPATGHLFKRV 39
1 MLFKSWQLAAASGLLSGVLGIPMDTGSHPIEAVDPEVKTEVFADSLIAAA 50
40 AQISPQYPMFTV....PLPIPPVKQPRLTVINPVGNGQEIWYYEVEIKPFT 85
51 GDDDWESPPYNLLYRNALPIPPVKQPKMIIINPVIGKDIWYYEIEIKPFO 100
86 HQVYPDLGSADLVGYDGMSGPTFQVPRGVEIVRFINNAEAPNSVHLHG 135
101 QRIYPTILRPATLVGYDGMSGPTFQVPRGVEIVRFINNAEAPNSVHLHG 150
136 SFSRAAFDGWAEDITEPGSFKDYYPNRQSARTILWYHDHAMHTAENAYR 185
151 SPSRAPFDGWAEDVTPGEYKDYYFPNYQSAHLWYHDHAFMKTAEENAYF 200
186 GQAGLYMLTDPAEDALNLPSTGYGEFDIPMILTSKQYTANGNLVTINGELN 235
201 GQAGAYIINDEAEDALGLPSGYGEFDIPLILITAKYYNADGTLRSTEGEDQ 250
236 SFWDGVIHNGQPWPFKNVEPRKYRFRFLDAAVSRSGLYFADTDALDIR 285
251 DLWGDVIHNGQPWPFLNVQPRKYRFRFLNAAVSRRAWILLYLVRTSSPNVR 300
286 LPFKVIASDGLLEHPADTSLLYISMAERYEVVFDFSDYAGKTIELRNIG 335
301 IPFQVIASDAGLLOQAVQTSNLYLAVAERYEIIIDFINFAGQTLDLRNV. 349
336 GSIGGIGTDTDYDNIDKVMRFVVADDTQPDTSVVPANLRDVPFPSPTIN 385
350 AEINDVGEDEYARTLEVMRFVVSSGIVE.DNSQVPSTLIRDVPFPPHKEG 398
386 .TPRQFRFGRIGPTWTINGVAFAADVQNRLIANVPVGIVERWEILINAGNGW 434
399 PADKHFKFERSNHYLINDVGFADVNERVLAKPELGIVEWELENSOGGW 448
435 THPIIHLVDFKVISRTSGNNARTVMPYES.GLKDVWLGRREIVVEAH 483
449 SHPVIIHLVDFKILKRTGGRG..QVMPYESAGLKDWWLGRGETLTIEAH 496
484 YAPPFGVYMFHCHNLTHEIDHDMMAAFNATVLPDYGYNATVFVDPMEELWQ 533
497 YQPWTGAYMWCHNLTHEIDHDMMAVFNTAMEEKGYLQEDFEDPMNPKWR 546
534 ARPYELGEFQAQSGQFSVQAVTERIQTMAYRPyAAADE..... 572
547 AVPYNRNDFHARAGNFSAESITARVOELAOEPYRNLDIELEDLGIEE 594

Figure 3: protein sequences alignment of Bilirubin oxidase (top sequence) with *Stachybotrys* oxidase (bottom sequence).

Figure 3

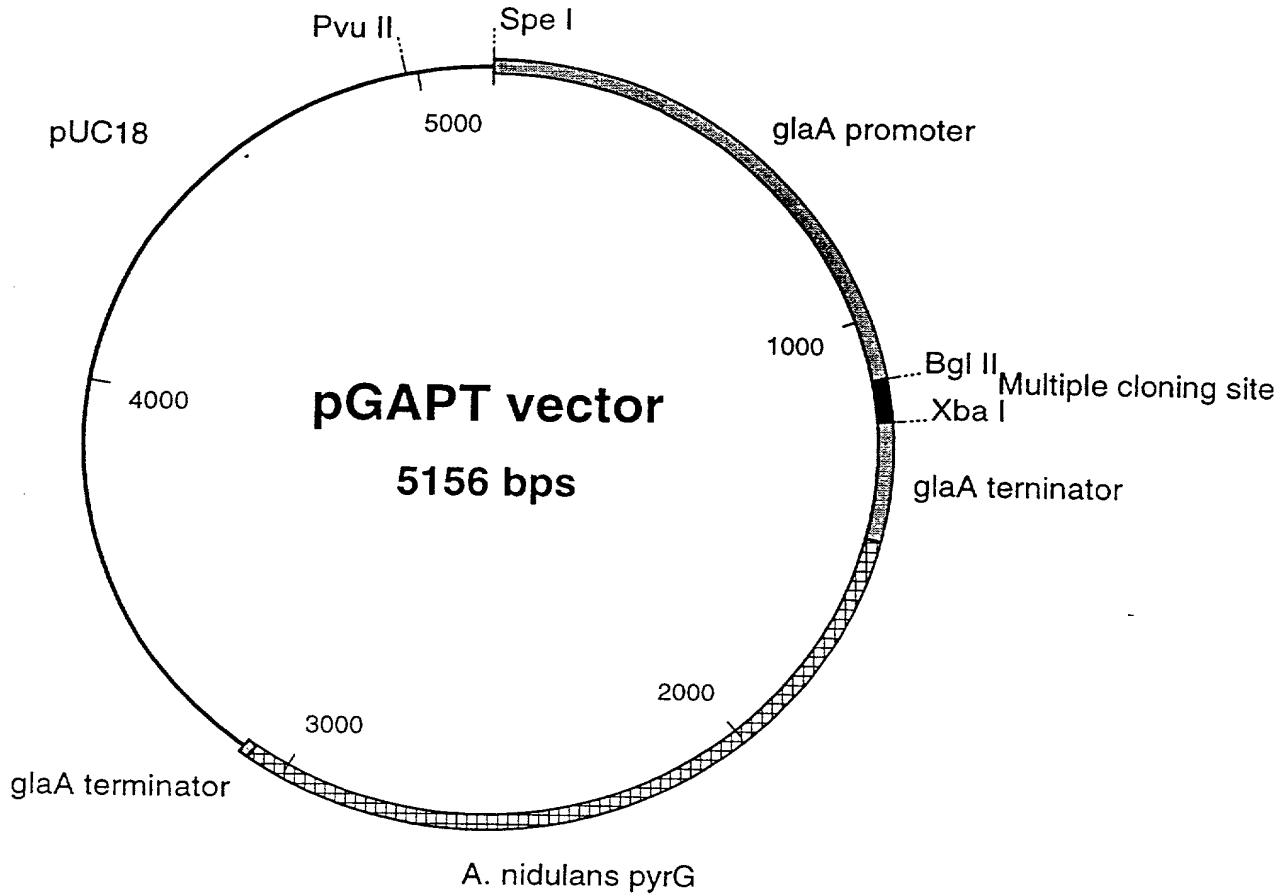


Figure 4

AGATCTAATA TGCTGTCAA GTCATGGCAA CTGGCAGCAG CCTCCGGGCT CCTGTCTGGA 60
GTCCTGGCA TCCCCATGGA CACCGGCAGC CACCCCATIG AGGCTGTTGA TCCCCAAGTG 120
AAGACTGAGG TCCTCGCTGA CTCCCCTCTT GCTGCAGCAG GCGATGACGA CTGGGAGTCA 180
CCTCCATACA ACTTGCTTTA CAGGTGAGAC ACCTGTCCA CCTGTTTCC CTGGATAACT 240
AACTCTTATA GGAATGCCCT GCCAATTCCA CCTGTCAAGC AGCCCAAGAT GTATGTCCTT 300
GATTCTCTAC GAAGCAACTC GGCCCCGACT AATGTATTCT AGGATCATTA CCAACOCTGT 360
CACCGGCAAG GACATTGGT ACTATGAGAT CGAGATCAAG CCATTCAGC AAAGGGTGAG 420
TTTGTCTAGA AACCTTGTGG TAATTAATCA TTGTTACTGA CCCTTTAGA TTTACCCCAC 480
CTTGGGCCCCCT GCCACTCTCG TCGGCTACGA TGGCATGAGC CCTGGTCCTA CTTCATG 540
TCCCAGAGGA ACAGAGACTG TAGTTAGGT CATCAACAAT GCCACCGTGG AGAACTCGGT 600
CCATCTGCAC GGCTCCCCAT CGCGTGGCCC TTTCGATGGT TGGGTGAAG ATGTGACCTT 660
CCCTGGGAG TACAAGGATT ACTACTTCC CAACTACCAA TCCGGGGGCC TTCTGTGGTA 720
CCATGACCAC GCTTCATGA AGGTATGCTA CGAGCCTTTA TCTTTCTTGG CTACCTTTGG 780
CTAACCAACT TCCCTCGTA GACTGCTGAG AATGCTACT TTGGTCAGGC TGGCGCCTAC 840
ATTATCAACG ACGAGGCTGA GGATGCTCTC GGTCTTCCTA GTGGCTATGG CGAGTTCGAT 900
ATCCCTCTGA TCCGTACGGC CAAGTACTAT AACGCCGATG GTACCCCTGCG TTGACCGAG 960
GGTGAGGACC AGGACCTGTG GGGAGATGTC ATCCATGTCA ACGGACAGCC ATGGCCTTTC 1020
CTTAACGTCC AGCCCCGCAA GTACCGTTTC CGATTCCTCA ACGCTGCCGT GTCTGTGCT 1080
TGGCTCTCT ACCTCGTCAG GACCAGCTCT CCCAACGTCA GAATTCCCTT CCAAGTCATT 1140
GCCCTCTGATG CTGGCTCTCT TCAAGGCCCCC GTTCAGACCT CTAACCTCTA CCTTGCTGTT 1200
GCGGAGCGTT ACGAGATCAT TATTGGTATG CCCTCCCCCTC TCAAGAATGA GTCAAGAACT 1260
CTAAGACTAA CACTTGTAGA CTTCACCAAC TTTGCTGGCC AGACTCTTGA CCTGCGCAAC 1320
GTGCTGAGA CCAACGATGT CGCGGAGCAG GATGAGTAAG CTGGCACTCT CGAGGTGATG 1380
CGCTTCGTGCG TCAGCTCTGG CACTGTTGAG GACAACAGCC AGGTCCCCCTC CACTCTCCGT 1440
GACGTTCTT TCCCTCTCTA CAAGGAAGGC CGCGGCGACA AGCACTTCAA GTTGAACGC 1500
AGCAACGGAC ACTACCTGAT CAACGATGTT GGCTTGGCG ATGTCAATGA GCGTGTCTG 1560
GCCAAGCCCC AGCTCGGCAC CGTTGAGGTC TGGGAGCTCG AGAACTCTTC TGGAGGCTGG 1620
AGCCACCCCC TCCACATTCA CCTTGTTGAC TTCAAGATCC TCAAGCGAAC TGGTGGTCTG 1680
GGCCAGGTCA TGCCCTAOGA GTCTGCTGGT CTTAAGGATG TCGTCTGGIT GGGCAGGGGT 1740
GAGACCCCTGA CCATCGAGGC CCACTACCAA CCCTGGACTG GAGCTTACAT GTGGCACTGT 1800
CACAACCTCA TTCAOGAGGA TAAOGACATG ATGGCTGTAT TCAACGTAC CGCCATGGAG 1860
GAGAAGGGAT ATCTTCAGGA GGACTTCGAG GACCCCATGA ACCCCAAGTG CGCGGCGGT 1920
CCTTACAACC GCAACGACTT CCATGCTCGC GCTGGAAACT TCTCCGCCA GTCCATCACT 1980
GCCCGAGTGC AGGAGCTGGC CGAGCAGGAG CGTACAAACC GCCTCGATGA GATGCTGGAG 2040
GATCTTGGAA TCGAGGAGTA GTCTAGA 2067

Figure 5

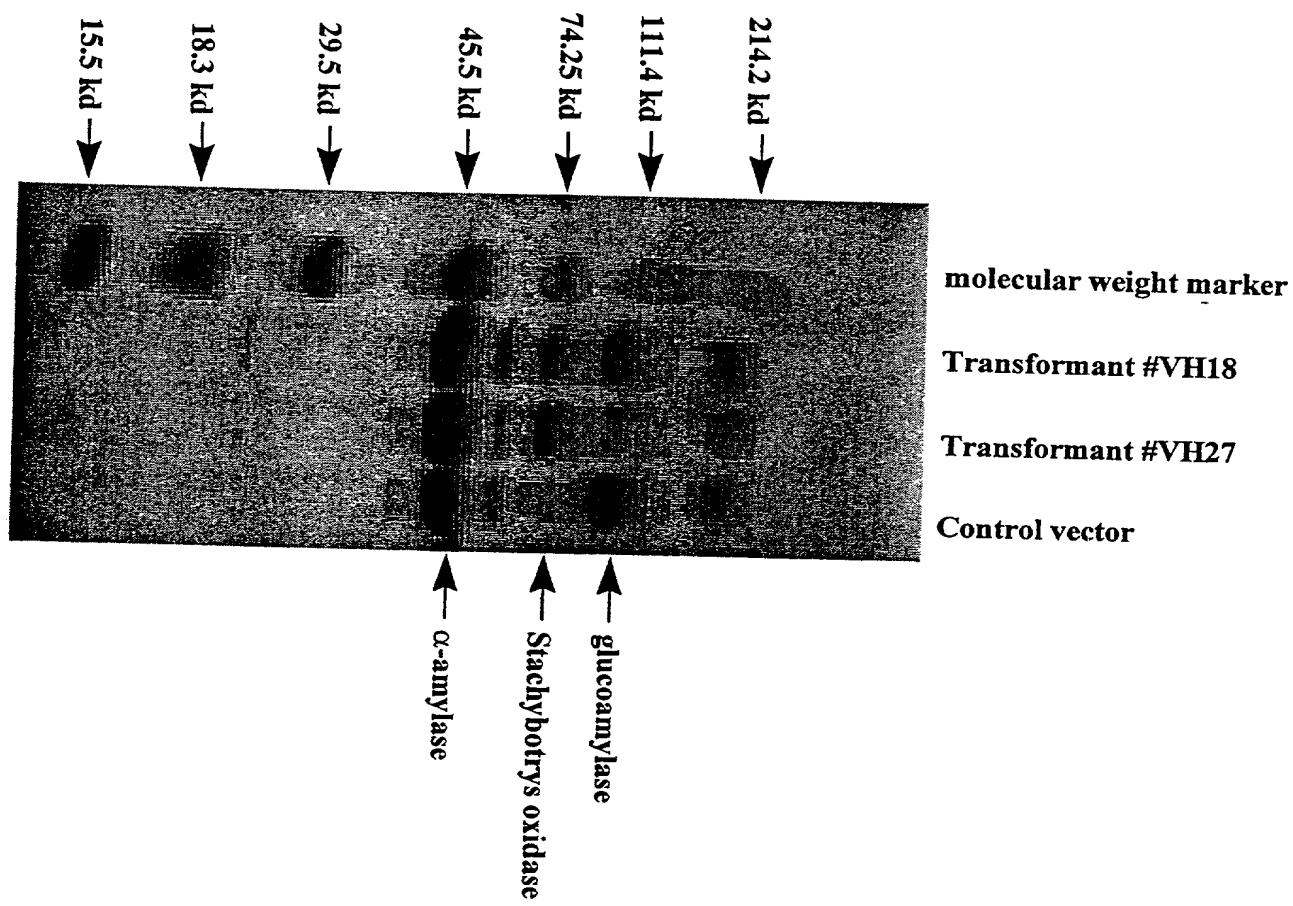


Figure 6